Hospital Infection Control Issues Related to Bioterrorism

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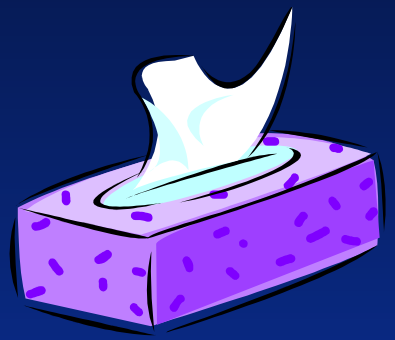
Objectives

- **To gain an understanding of:**
  - ✓ **Emerging & Re-Emerging Pathogens plus Bioterrorist Agents, including signs and symptoms, transmissability, and timely perspectives**
  - ✓ **Current threat of such agents**
  - ✓ **Smallpox vaccination plan in event of a single infection, including administration, potential side effects, and precautions**

No Global Boundaries / Boarders

What do you need to know?



VHF

Acinetobacter

Smallpox

Monkeypox

CJD

Botulinum toxin

Influenza

Anthrax

SARS

Plague

Mad Cow Disease

Avian flu

Tularemia

- **Patient Management: Infection Control Practices**
  - ✓ **Isolation Precautions**
    - → **Standard Precautions May Include Gloves, Gowns, Masks**
    - → **Scrupulous Handwashing**

Soap, running water, 10-15 seconds

Rub foam 'til dry

Gown

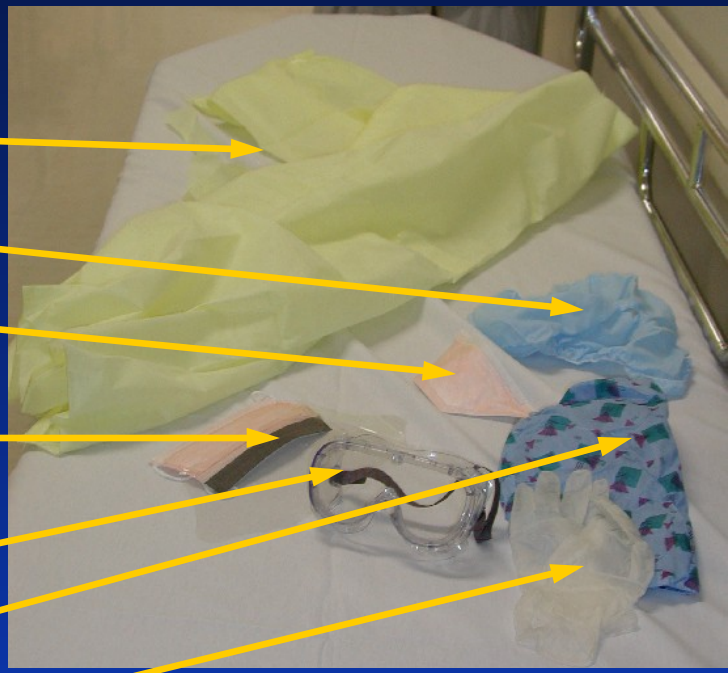
Booties

N95

Surgical Mask with Eye Shield

Goggles

Cap



Gloves

Mass Casualty Disaster Plan Checklist

Emergency management for healthcare facilities includes elements of mitigation, preparedness, response, and recovery. Plans should take into account such fa as the appropriateness and adequacy of physical facilities, organizational structures, human resources, and communication systems. The checklist is designed provide questions that stimulate assessment and dialogue with key stakeholders both within NNMC as well as at the local level and beyond. Utilizing this checkl process, Infection Control can assist in identifying both thought and action leaders. Although the checklist divides the assessment into sections, many of them o and may be grouped in differing manners.

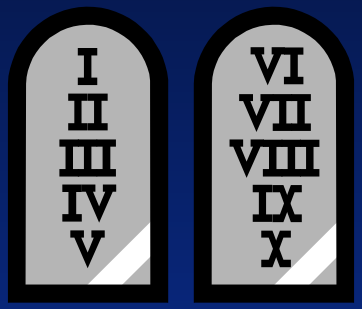
1. FOUNDATIONAL CONSIDERATIONS:	Assessment	Action Plan	Accountability Contact - Region	Accountability Contact - Local
A. Does the facility have a disaster plan?				
B. Is there a disaster planning committee? Is it multidisciplinary and include administrative members?				
C. Is there currently a collaborative relationship with the local Emergency Medical Services (EMS) Agencies, local Emergency Management Agency and the local Health Department as part of the planning operation?				
D. Does the plan detail actions to be taken for both internal and external disasters?				
E. Does the plan detail how it links with the local EMS Agencies and local Emergency Management Agency?				
F. Is the plan widely distributed and readily available throughout the hospital/healthcare facility? Distribution should include hard copies of the plan or an automated method that is readily available to all staff members.				

2. SURVEILLANCE	Assessment	Action Plan	Accountability Contact - Region	Accountability Contact - Local
A. Does the facility currently have a baseline established for numbers of patients seen in the facility Emergency Department, outpatient clinics, or via direct admission, stratified according to clinical symptoms?				
B. Is there currently a process to evaluate and track 100% of all microbiology results and stratify according to organism?				
C. Does a process exist to notify infection control 24 hours a day/ 7 days a week?				
D. Does the plan specify the number and location of isolation or protective environment rooms? Are their locations clearly identified in a document readily available to the disaster coordinator or command team? Are isolation facilities monitored to insure adequate airflow?				

Fit Check

N95 Utilization

Ten Commandments of Bioterrorism Casualty Management

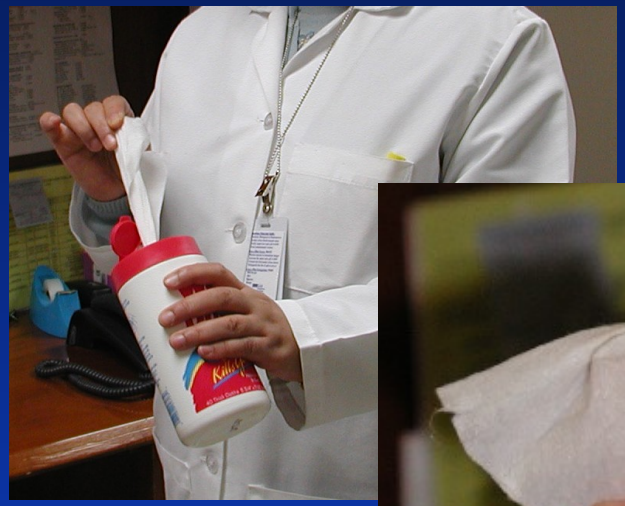


I. Index of Suspicion
II. Protect Self and Patients
III. Assess the Patient
IV. Decontaminate as Appropriate
V. Establish Diagnosis
VI. Treat Promptly
VII. Practice Good Infection Control
VIII. Alert Proper Authorities
IX. Epidemiologic Assessment
X. Educate Others

CDR Randy Culpepper

Microbiology May First ID Unusual Strains of Organisms

Readiness without Running Water



Consistent, Appropriate Use of PPE

Bioterrorism Agents Integral to Emerging/Re-emerging Pathogens

- Infection Prevention/Control Programs Key to
  - ✓ Management of
    - Emerging/Re-Emerging Resistance Patterns
    - Bioterrorist Agents

Physical Exam / Triage

- Respiratory
- Neuromuscular
  - ✓ Central and Peripheral
- Hematologic / Vascular
- Dermatologic
- GI

- ✓ **Triage and Mgt of Large Scale Exposure and Suspected Exposures**
  - → **Establish Communication Networks**
  - → **Plan Cancellation Non-Emergency Services, etc.**
  - → **ID Stockpiles & Resources**
  - → **Plan for Efficient Evaluation/DC Patients**
  - → **DC Instructions for Non-Contagious Patients**
- ✓ **Psychological Aspects of Bioterrorism**

Alert Proper Authorities

- Internally
  - ✓ Infection Control/Infectious Diseases
  - ✓ Preventive Medicine
  - ✓ Microbiology Lab
  - ✓ Administration
  - ✓ PAO
- Public health offices
- FBI/FEMA/DHS

Archives 1946-76. American College of Nurse Midwives

Training Class

Tabletop Exercises & Drills

U.S. Hospital Ship Relief

War of 1898: Ward 3

USNS Comfort

HEPA Filters

Vinyl Curtain / Tracking

Comfort Upgrade

USNS COMFORT
(T-AH 19)

Heating, Air Conditioning, and Ventilation

99-R-xxxx
18 May 2000
Revised to Reflect As Built on USNS Comfort

ITEM NO. 801 Category "A" MSCHQ/N722E/CAL

Isolation Ward Installation

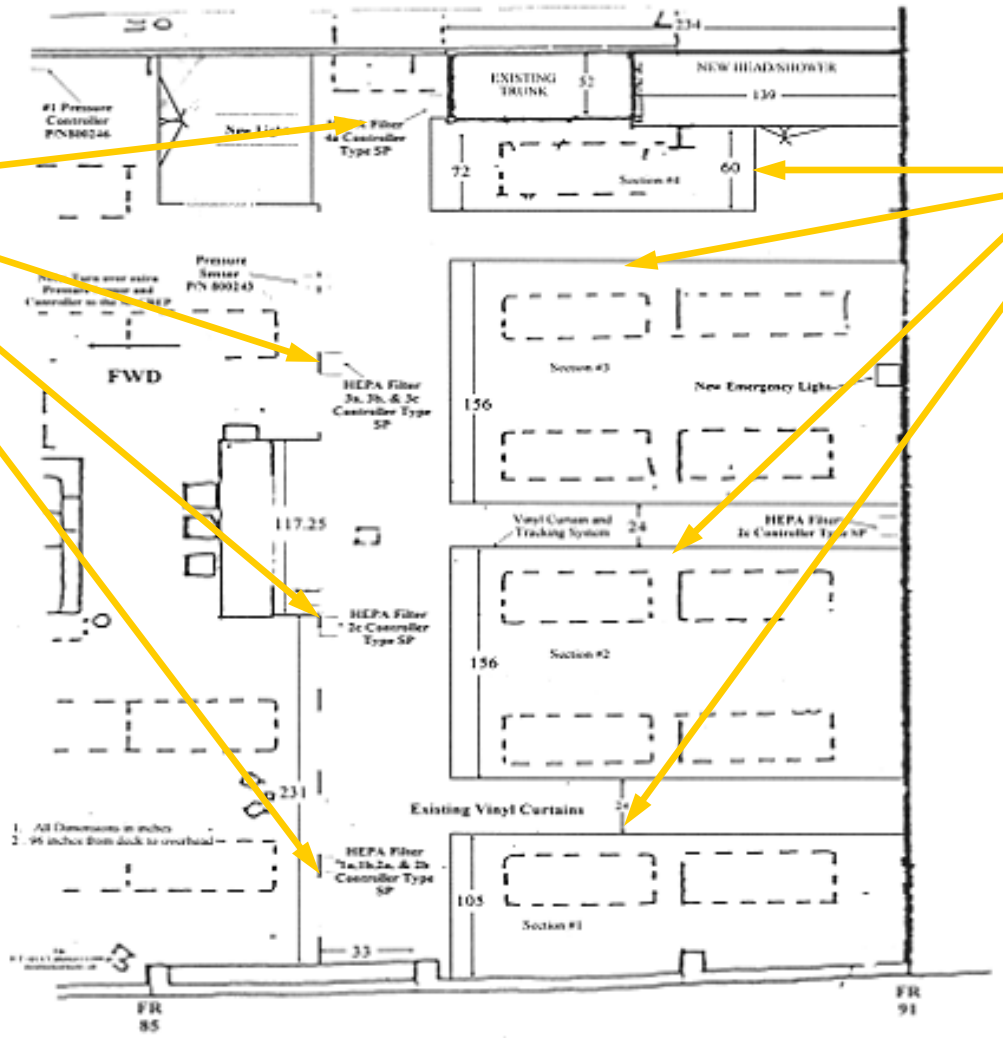


Figure 801-13

801-25

"Space Suit" PPE only required in BSL-4 labs

CDC

USAMRIID is one of the few laboratories in the country equipped to study highly hazardous viruses at Biosafety Level 4.

Organization of References: Readiness Plans, Stockpiles, Location of Emergency Communications Devices, On-Call Numbers, Internet Addresses, etc.

Critical Care Beds

Emergency Rxs

BT Readiness Plan

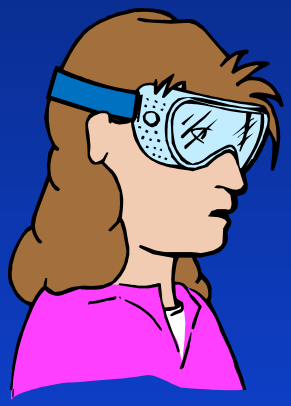
Medical and Health Incident Management (MaHIM) System

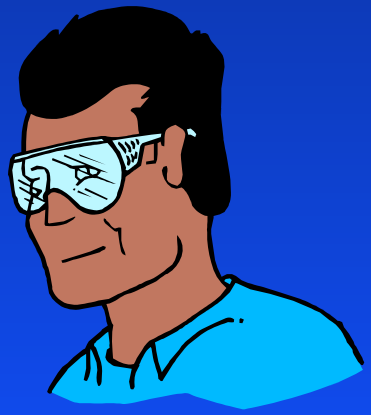
Avian Flu

BBC News 18 May 2001

Influenza

SARS





Appropriate Use
of PPE Is Critical
NLM Archives

Mad Cow Disease and CJD

Monkeypox

courtesy APHIS USDA

Gambian giant-pouched rat (*C. gambianus*)

courtesy Lincoln Park Zoo

Anthrax
Heart
Lung

7 month old baby NYC

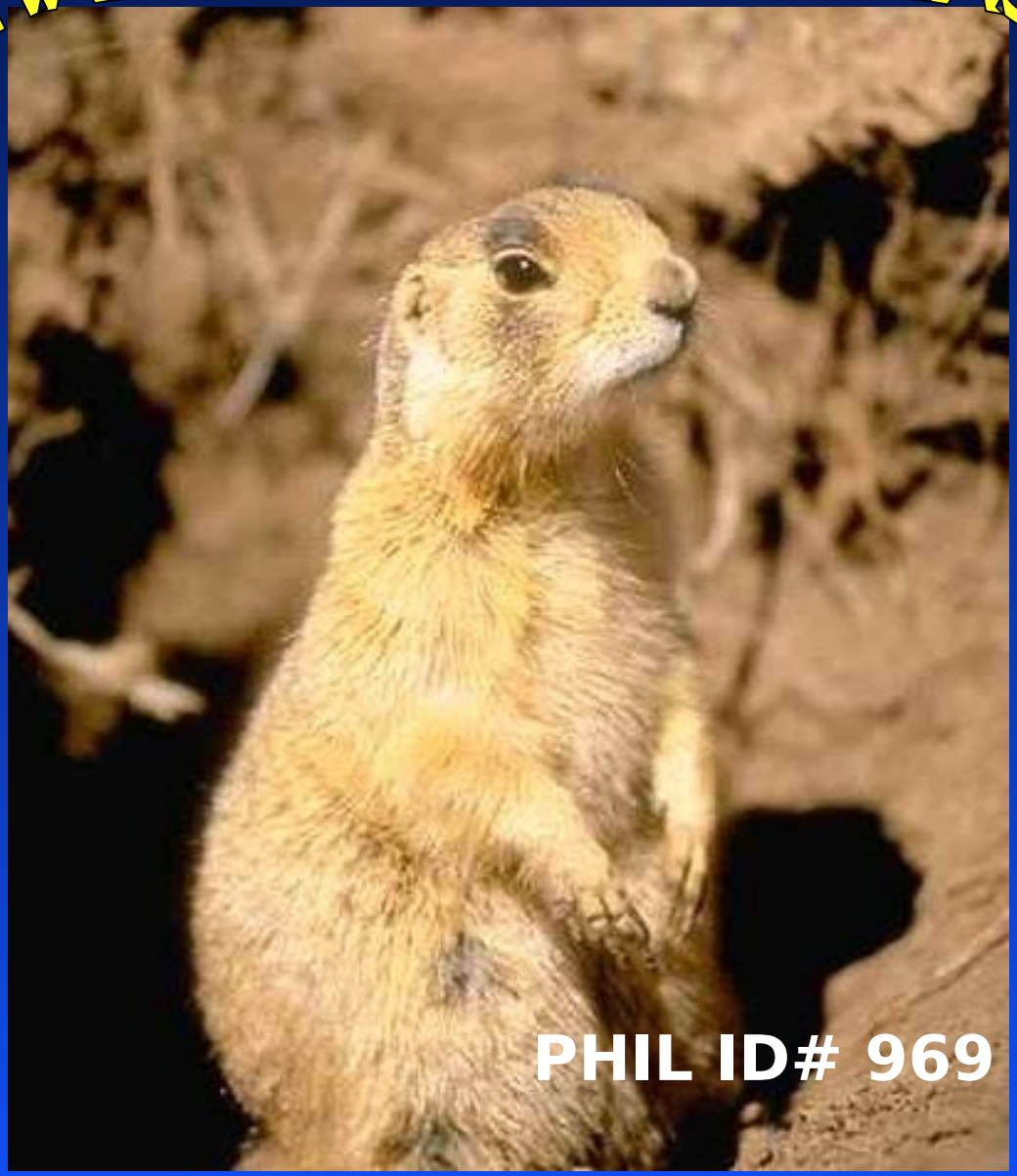
Information About ANTHRAX For You & Your Family

Distributed throughout facility

National Naval
Medical Center
Infectious Diseases Service
Infection Control Branch
(301) 295-4237
DSN 295-4237

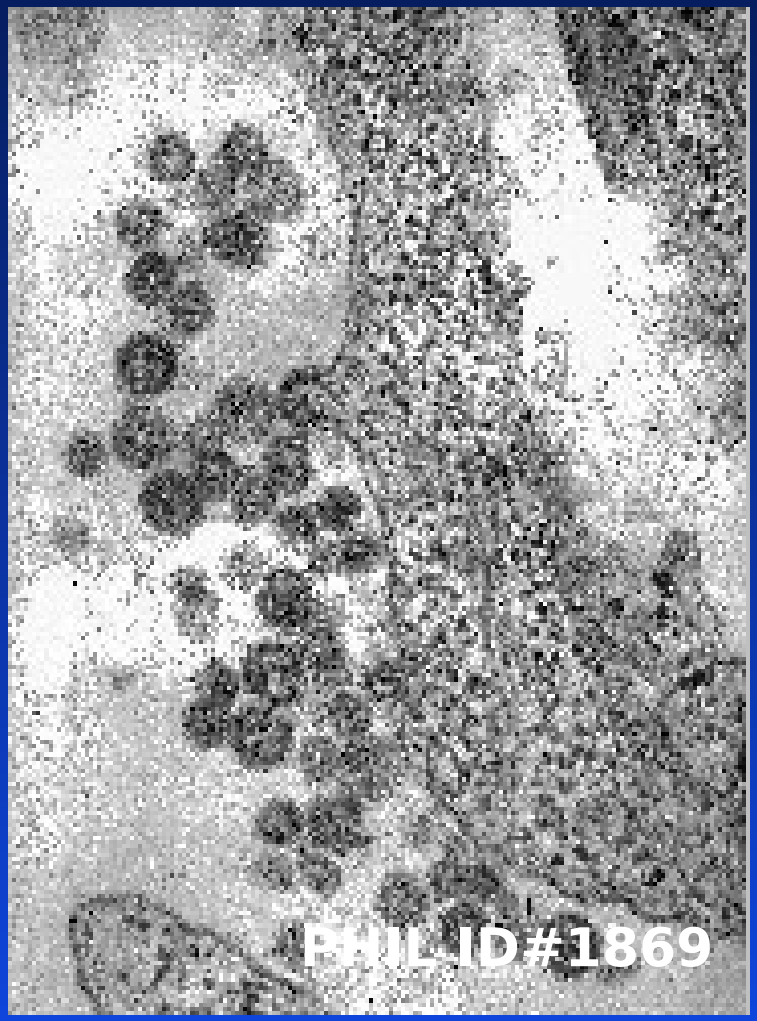
Botulinum Toxin?

HARBINGER OF FLEAS



Plague

Tularemia



Viral Hemorrhagic Fever (VHF) - Machupo

Variola Major
PHIL ID #131
CDC/NIP/Barbara Rice

Adaptation of CDC and DoD Tools

NNMC SYMPTOM DIARY AFTER SMALLPOX VACCINATION

Symptom(s) Please check off any symptoms present on each indicated day	Day 1 (Date on Day of Vaccination)	2	3	4	5	6	*7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
No symptoms																					
Fever (write down temperature)																					
Chills																					
Joint pain																					
Muscle pain																					
Fatigue																					
Loss of Appetite																					
Cough																					
Vaccination site rash/lesion (code)																					
Rash elsewhere																					
Swelling/tender lymph nodes																					
Itch at vaccination site																					
Itch on body																					
Pain at vaccination site																					
Headache																					
Backache																					
Abdominal pain																					
Difficulty breathing																					
Vaccinia lesions other than at vaccination site																					
Other (describe on back of page)																					
Medical care sought (describe on back page)?																					
Did you take any medications?																					

Name (Last, First, MI): _____ SS#_____ DOB: ___-___-_____ Age: _____ ☐Male or ☐Female

Race ☐White/Caucasian ☐Asian ☐Black/African American ☐Native Hawaiian/Other Pacific Islander ☐Hispanic
☐American Indian/Alaskan Native ☐Some other race, specify: _____

Clinic Site of Vaccination: _____ Vaccine Lot #_____ Initials of Administrator: _____ *Date Scab Fell Off* __/__/__

Vaccination site/non-dominant deltoid (Choose One): ☐Right or ☐Left Rash/ lesion description: _____

Rash elsewhere description: _____

Vaccinia lesions other than at vaccination site: _____

Other: _____

Medications taken since vaccination: _____

If medical care sought, where? _____ Additional comments: _____

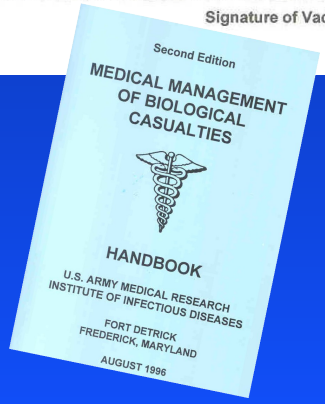
**Use all Letter Codes that apply:

A = pimple	F = redness
B = vesicle	G = swelling
C = ulcer	H = warmth
D = scab	I = pain
E = >3" size	J = streaks on arm

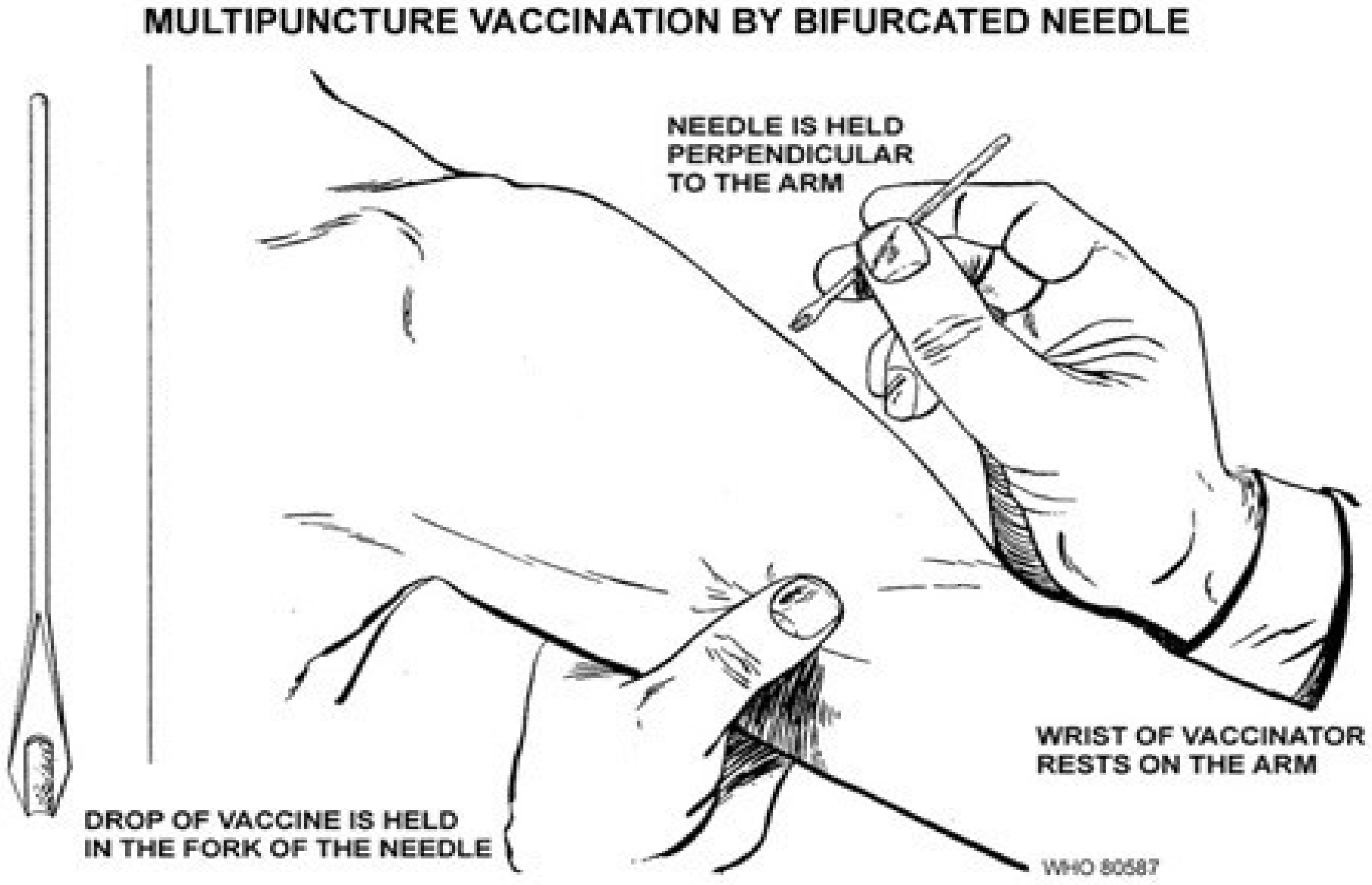
*Vaccination Reaction Day 7 (Choose One): ☐Major Reaction or ☐Equivocal *and Revaccinate If Equivocal* *Do NOT Work at Another MTF until Scab Has Fallen Off*

Data requested sub authority Privacy Act 1974, 5 U.S.C. §552A

Signature of Vaccinee: _____



Vaccination Technique


MULTIPUNCTURE VACCINATION BY BIFURCATED NEEDLE
NEEDLE IS HELD PERPENDICULAR TO THE ARM
WRIST OF VACCINATOR RESTS ON THE ARM
DROP OF VACCINE IS HELD IN THE FORK OF THE NEEDLE
WHO 80587

SOURCE DIAMOND

Semi-permeable Dressings

“Exuberance” in Primary Vaccinees

Cover Lesions and Scabs
with Pajama Bottoms
Tucked into Sox

Innovative Team Relationships

THANK YOU!